

**PATENT SPECIFICATION No. <sup>(11)</sup> 55104**

55104



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**COMPLETE SPECIFICATION**

(54) DECORATED COATED TEXTILE STRUCTURE AND PROCESS FOR ITS  
MANUFACTURE

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28 SEP 1990

SCIENCE REFERENCE AND  
INFORMATION SERVICE

PATENT APPLICATION BY: (71)  
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Price 80p

5 The present invention relates to a decorated coated textile structure, such as for example a tablecloth having an improved decorative appearance, and a process for manufacturing such a structure.

10 It is well known to produce decorated coated textile structures such as tablecloths comprising a textile support and a film of a plastic to which a decorative pattern is then applied by printing. These products have the appearance of oilcloth and, generally, the decorative pattern does not appear on the uncoated face of the structure.

15 It is also known to produce decorated coated textile structures comprising a textile support on which a decorative pattern is printed, the decorated face being then lined with a transparent thermoplastic film. These structures have the same printed decoration on both sides, the decoration on the uncoated face being generally less attractive.

20 The present invention aims at providing a decorated coated textile structure such as for example a tablecloth having the appearance of a printed textile on the coated face and an attractive decorative appearance of being embroidered on the uncoated face.

25 The decorated coated textile structure according to the invention comprises a flexible textile support, a coloured decorative pattern and a transparent film covering the support and the decorative pattern, in which the decorative pattern consists of a coloured flocking adhesive and a textile flock which overlaps the textile support on the face that is not covered with the transparent film.

30 The textile support may be a woven textile, a knitted textile or a non-woven textile of natural and/or synthetic fibres. To give the final textile structure a good flexibility it is generally preferred to employ a textile support whose weight per unit area is between 50

and 500 g/m<sup>2</sup> and preferably between 100 and 400 g/m<sup>2</sup>.

The flocking adhesive forming the decorative pattern can be any conventional flocking adhesive with a suitable viscosity such that it permits it to be deposited  
5 on the textile support according to a decorative pattern.

In particular this flocking adhesive can be based on a vinyl resin such as a copolymer of vinyl chloride with vinyl acetate, maleic acid and/or acrylonitrile, an acrylic resin such as a copolymer of an acrylic ester  
10 and acrylamide or a hydroxy polyester resin crosslinked with an isocyanate.

The flocking adhesive can be pigmented in various shades to permit multicoloured decorative patterns to be produced.

15 The textile flock employed in the textile structure according to the invention has a fibre length which varies between 0.2 and 2 mm and preferably between 0.5 and 1.5 mm, greater fibre lengths being nevertheless capable of being considered.

20 The textile flock consists of any fibres, milled or chopped fibres of nylon or of viscose being preferred.

The textile flock may be uncoloured or coloured, its colour being preferably identical to that of the flocking adhesive when the decorative pattern is produced in a  
25 single colour.

The transparent film is advantageously made from a vinyl resin and particularly from plasticised polyvinyl chloride, other transparent resins being nevertheless capable of being considered. The thickness of this film  
30 can vary between 0.070 and 1 mm and preferably between 0.150 and 0.5 mm.

The present invention also relates to a process for producing a decorated coated textile structure such as described above.

35 According to this process a decorative pattern consisting of a coloured flocking adhesive is applied to a face of a flexible textile support, the decorative pattern is covered by flocking by means of a textile flock, the textile support and the decorative pattern are covered

with a transparent film of a thermoplastic and the textile support with the transparent film are fixed together by pressing.

5 The decorative pattern can be applied to the textile support by any means of printing, such as in particular flexography, silk screen printing, gravure, and the like, the method known as rotary frame printing being preferred.

10 Thus, as has been stated, the decorative pattern may be single-coloured or multicoloured and, in the latter case, according to the usual techniques, it is produced by successive printings.

15 The deposited decorative pattern is then covered wholly or partly by flocking by means of a textile flock, this covering being capable of being produced by mechanical or electrostatic flocking. In the case where a decorative pattern is produced by successive printings, provision can be made for successive coverings by flocking between the printings, the flocks employed for each covering being  
20 capable of being uncoloured or variously coloured.

The textile support and the flocked decorative pattern are then covered with a transparent film of a thermoplastic which is fixed together by pressing.

25 This last operation, namely the pressing of the transparent film on the decorated textile support causes the textile flock to pass through the textile support and the decorative pattern and to overlap on the face of the textile support which is not covered with the transparent film, with the result that the decorative pattern is revealed on this face with an embroidered appearance in relief.  
30

It has been found moreover that this special effect can be enhanced when the pressing of the transparent film on the decorated textile support is carried out between  
35 a hard surface and an elastic surface, the hard surface being applied to the transparent film.

Thus, outstanding results were obtained by carrying out this pressing by passing the structure between a metal roll arranged on the side of the transparent film

and a rubber counterpart with a Shore hardness between 30 and 100.

The pressing is generally carried out hot at a temperature of 70 to 180°C and preferably 100 to 180°C, the transparent film being capable of being preheated.

In order to improve the fixing of the transparent film to the decorated textile support the film may be coated with a transparent adhesive layer such as for example a layer of a vinyl plastisol before it is applied to the textile support.

The decorated coated textile structure according to the invention and its embodiment are furthermore illustrated in greater detail in the following example of a practical embodiment and in the description thereof reference will be made to the figures in the attached drawings, in which:

Figure 1 shows in section a decorated coated textile structure before the application of the transparent film.

Figure 2 shows in section a decorated coated textile structure according to the invention.

Figure 3 shows a diagrammatic view of a piece of equipment which may be employed to produce a decorated coated textile structure according to Figure 2.

#### 25 Example

To produce a decorated coated textile structure according to the invention a cotton woven textile was employed, with a weight per unit area of 120 g/m<sup>2</sup> and containing 24 yarns per centimetre as warp and 20 yarns per centimetre as weft, the warp yarns having a metric number of 40 and the weft yarns a metric number of 34.

This textile support 1, unwound from a reel 2, is first printed with a decorative pattern 3 by means of a flocking adhesive applied in the rotary frame printing equipment 4. A pigmented composition based on a crosslinkable hydroxy polyester was employed as a flocking adhesive.

The decorative pattern deposited is then coated by flocking in the electrostatic flocking device 5 using an uncoloured flock 6 consisting of nylon fibres of 1 mm length

as flocking material.

After this operation the textile support such as shown in Figure 1 is covered directly on its decorated face with a transparent film 7 of polyvinyl chloride plasticised with 70 phr previously coated with a polyvinyl chloride plastisol, the coupling to the textile support being produced by pressing between a metal roll 8 and a rubber counterpart 9 with a Shore hardness of 50, the pressing being carried out at a temperature of 170°C.

10 After this operation a decorated coated textile structure as shown in section in Figure 2 is collected on the reel 10. It is found that, under the effect of the pressure applied during the application of the transparent film 7, the flock 6 which covered the decorative pattern 3  
15 (Figure 1) has passed through the decorative pattern 3 and the textile support 1 so as to overlap the face of the textile support which is not covered with the transparent film.

As a consequence the product thus obtained, <sup>when</sup> examined on its coated face, has the known appearance of a printed coated textile while the same product examined on its uncoated face, has an embroidered decorative appearance.

25 This structure is particularly suitable for the manufacture of tablecloths whose coated face withstands soiling during meals or in the course of dirty work and whose uncoated face, having an embroidered and more attractive appearance, can be made to show in order to produce a superior display.

Claims

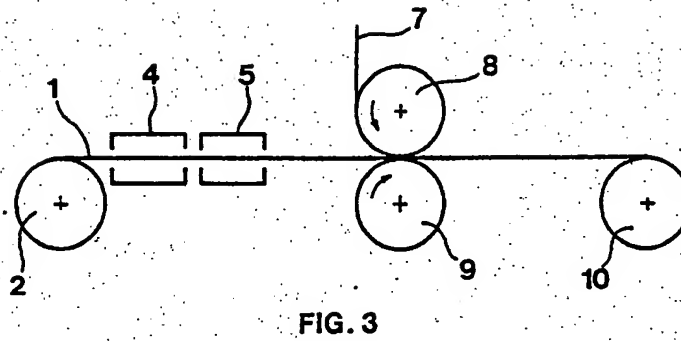
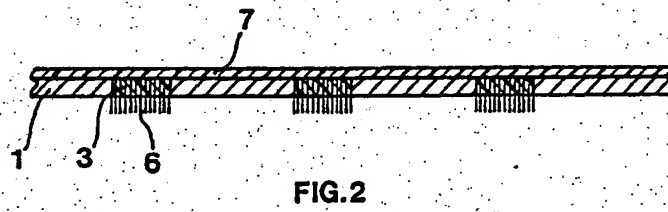
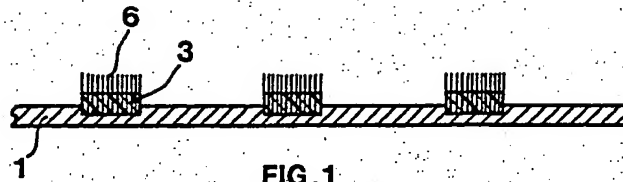
1. Decorated coated textile structure comprising a flexible textile support, a coloured decorative pattern and a transparent film covering the support and the decorative pattern, in which the decorative pattern consists of a coloured flocking adhesive and a textile flock which overlaps the textile support on the face that is not covered by the transparent film.
2. Decorated coated textile structure according to Claim 1, wherein the coloured flocking adhesive is a resin chosen from the group formed by vinyl resins, acrylic resins and hydroxy polyester resins cross-linked with an isocyanate.
3. Decorated coated textile structure according to Claim 1 or 2, wherein the textile flock has a fibre length of between 0.2 and 2 mm.
4. Decorated coated textile structure according to any one of Claims 1 to 3, wherein the textile flock is uncoloured.
5. Decorated coated textile structure according to any one of Claims 1 to 3, wherein the textile flock is coloured.
6. Decorated coated textile structure according to any one of Claims 1 to 5, wherein the transparent film is a film made of vinyl resin.
7. Process for manufacturing a decorated coated textile structure according to any one of Claims 1 to 6, wherein a decorative pattern consisting of a coloured flocking adhesive is applied to a face of a flexible textile support, the decorative pattern is covered by flocking by means of a textile flock, the textile support and the decorative pattern are covered with a transparent film of a thermoplastic and the textile support and the transparent film are fixed together by pressing.
8. Process according to Claim 7, wherein in that the transparent film is coated with a transparent adhesive layer before its application to the textile support.

9. Process according to any one of Claims 7 to 8, wherein the pressing is carried out between a hard surface and an elastic surface, the hard surface being applied to the transparent film.
10. Process according to Claim 9, wherein the pressing is carried out by passing between a metal roll and a rubber counterpart with a Shore hardness between 30 and 100.
11. A process for manufacturing a decorated coated textile structure, substantially as hereinbefore described with reference to Figure 3 of the accompanying drawings.
12. A process for manufacturing a decorated coated textile structure, substantially as hereinbefore described with reference to the Example.
13. A decorated coated textile structure, whenever prepared by a process as claimed in any of claims 7 to 12.
14. A decorated coated textile structure substantially as hereinbefore described with reference to Figure 2 of the accompanying drawings.

Dated this 6th day of April 1984.

BY: TOMKINS & CO.,  
Applicants' Agents,  
(Signed) *John Hawa*  
5 Dartmouth Road,  
DUBLIN 6.





TOMKINS & CO.

Signed by .....

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FRANCOIS IER, F-75383 PARIS CEDEX 08, FRANCE.

Price 90p

5 The present invention relates to a decorated coated textile structure, such as for example a tablecloth having an improved decorative appearance, and a process for manufacturing such a structure.

10 It is well known to produce decorated coated textile structures such as tablecloths comprising a textile support and a film of a plastic to which a decorative pattern is then applied by printing. These products have the appearance of oilcloth and, generally, the decorative pattern does not appear on the uncoated face of the structure.

15 It is also known to produce decorated coated textile structures comprising a textile support on which a decorative pattern is printed, the decorated face being then lined with a transparent thermoplastic film. These structures have the same printed decoration on both sides, the decoration on the uncoated face being generally less attractive.

20 The present invention aims at providing a decorated coated textile structure such as for example a tablecloth having the appearance of a printed textile on the coated face and an attractive decorative appearance of being embroidered on the uncoated face.

25 The decorated coated textile structure according to the invention comprises a flexible textile support, a coloured decorative pattern and a transparent film covering the support and the decorative pattern, in which the decorative pattern consists of a coloured flocking adhesive and a textile flock which overlaps the textile support on the face that is not covered with the transparent film.

30 The textile support may be a woven textile, a knitted textile or a non-woven textile of natural and/or synthetic fibres. To give the final textile structure a good flexibility it is generally preferred to employ a textile support whose weight per unit area is between 50

and 500 g/m<sup>2</sup> and preferably between 100 and 400 g/m<sup>2</sup>.

The flocking adhesive forming the decorative pattern can be any conventional flocking adhesive with a suitable viscosity such that it permits it to be deposited  
5 on the textile support according to a decorative pattern.

In particular this flocking adhesive can be based on a vinyl resin such as a copolymer of vinyl chloride with vinyl acetate, maleic acid and/or acrylonitrile,  
10 an acrylic resin such as a copolymer of an acrylic ester and acrylamide or a hydroxy polyester resin crosslinked with an isocyanate.

The flocking adhesive can be pigmented in various shades to permit multicoloured decorative patterns to be produced.

15 The textile flock employed in the textile structure according to the invention has a fibre length which varies between 0.2 and 2 mm and preferably between 0.5 and 1.5 mm, greater fibre lengths being nevertheless capable of being considered.

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The textile flock may be uncoloured or coloured, its colour being preferably identical to that of the flocking adhesive when the decorative pattern is produced in a  
25 single colour.

The transparent film is advantageously made from a vinyl resin and particularly from plasticised polyvinyl chloride, other transparent resins being nevertheless capable of being considered. The thickness of this film  
30 can vary between 0.070 and 1 mm and preferably between 0.150 and 0.5 mm.

The present invention also relates to a process for producing a decorated coated textile structure such as described above.

35 According to this process a decorative pattern consisting of a coloured flocking adhesive is applied to a face of a flexible textile support, the decorative pattern is covered by flocking by means of a textile flock, the textile support and the decorative pattern are covered

with a transparent film of a thermoplastic and the textile support with the transparent film are fixed together by pressing.

The decorative pattern can be applied to the textile support by any means of printing, such as in particular flexography, silk screen printing, gravure, and the like, the method known as rotary frame printing being preferred.

Thus, as has been stated, the decorative pattern may be single-coloured or multicoloured and, in the latter case, according to the usual techniques, it is produced by successive printings.

The deposited decorative pattern is then covered wholly or partly by flocking by means of a textile flock, this covering being capable of being produced by mechanical or electrostatic flocking. In the case where a decorative pattern is produced by successive printings, provision can be made for successive coverings by flocking between the printings, the flocks employed for each covering being capable of being uncoloured or variously coloured.

The textile support and the flocked decorative pattern are then covered with a transparent film of a thermoplastic which is fixed together by pressing.

This last operation, namely the pressing of the transparent film on the decorated textile support causes the textile flock to pass through the textile support and the decorative pattern and to overlap on the face of the textile support which is not covered with the transparent film, with the result that the decorative pattern is revealed on this face with an embroidered appearance in relief.

It has been found moreover that this special effect can be enhanced when the pressing of the transparent film on the decorated textile support is carried out between a hard surface and an elastic surface, the hard surface being applied to the transparent film.

Thus, outstanding results were obtained by carrying out this pressing by passing the structure between a metal roll arranged on the side of the transparent film

and a rubber counterpart with a Shore hardness between 30 and 100.

The pressing is generally carried out hot at a temperature of 70 to 180°C and preferably 100 to 180°C, the transparent film being capable of being preheated.

In order to improve the fixing of the transparent film to the decorated textile support the film may be coated with a transparent adhesive layer such as for example a layer of a vinyl plastisol before it is applied to the textile support.

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15 (Figure 1) has passed through the decorative pattern 3 and the textile support 1 so as to overlap the face of the textile support which is not covered with the transparent film.

As a consequence the product thus obtained, <sup>when</sup> examined on its coated face, has the known appearance of a  
20 printed coated textile while the same product examined on its uncoated face, has an embroidered decorative appearance.

This structure is particularly suitable for the  
25 manufacture of tablecloths whose coated face withstands soiling during meals or in the course of dirty work and whose uncoated face, having an embroidered and more attractive appearance, can be made to show in order to produce a superior display.

Claims

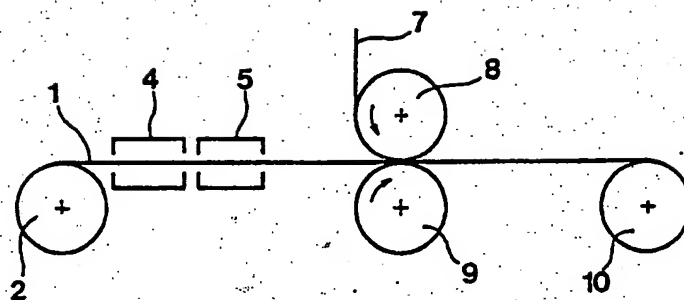
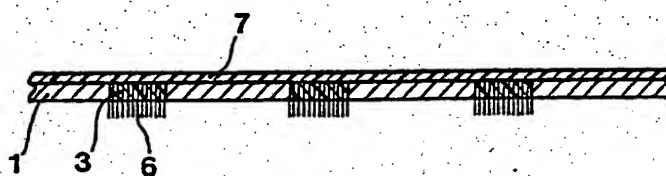
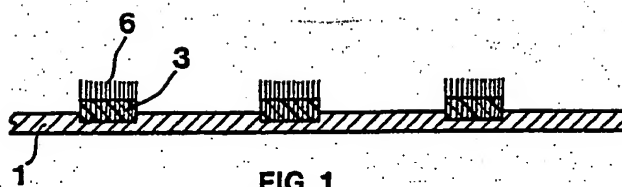
1. Decorated coated textile structure comprising a flexible textile support, a coloured decorative pattern and a transparent film covering the support and the decorative pattern, in which the decorative pattern consists of a coloured flocking adhesive and a textile flock which overlaps the textile support on the face that is not covered by the transparent film.
2. Decorated coated textile structure according to Claim 1, wherein the coloured flocking adhesive is a resin chosen from the group formed by vinyl resins, acrylic resins and hydroxy polyester resins cross-linked with an isocyanate.
3. Decorated coated textile structure according to Claim 1 or 2, wherein the textile flock has a fibre length of between 0.2 and 2 mm.
4. Decorated coated textile structure according to any one of Claims 1 to 3, wherein the textile flock is uncoloured.
5. Decorated coated textile structure according to any one of Claims 1 to 3, wherein the textile flock is coloured.
6. Decorated coated textile structure according to any one of Claims 1 to 5, wherein the transparent film is a film made of vinyl resin.
7. Process for manufacturing a decorated coated textile structure according to any one of Claims 1 to 6, wherein a decorative pattern consisting of a coloured flocking adhesive is applied to a face of a flexible textile support, the decorative pattern is covered by flocking by means of a textile flock, the textile support and the decorative pattern are covered with a transparent film of a thermoplastic and the textile support and the transparent film are fixed together by pressing.
8. Process according to Claim 7, wherein in that the transparent film is coated with a transparent adhesive layer before its application to the textile support.



9. Process according to any one of Claims 7 to 8, wherein the pressing is carried out between a hard surface and an elastic surface, the hard surface being applied to the transparent film.
10. Process according to Claim 9, wherein the pressing is carried out by passing between a metal roll and a rubber counterpart with a Shore hardness between 30 and 100.
11. A process for manufacturing a decorated coated textile structure, substantially as hereinbefore described with reference to Figure 3 of the accompanying drawings.
12. A process for manufacturing a decorated coated textile structure, substantially as hereinbefore described with reference to the Example.
13. A decorated coated textile structure, whenever prepared by a process as claimed in any of claims 7 to 12.
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Dated this 6th day of April 1984.

BY: TOMKINS & CO.,  
(Signed) Applicants' Agents,  
5 Dartmouth Road,  
DUBLIN 6.



TOMKINS & CO.

Signed by \_\_\_\_\_